

# SANGEET KHEMLANI

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*Last updated: 2024-04-09*

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## POSITIONS

- 2018- **Senior Cognitive Scientist**, Navy Center for Applied Research in Artificial Intelligence, NRL
- 2016- **Principal Investigator**, Reasoning Lab @ NRL
- 2014-2018 **Cognitive Scientist**, Navy Center for Applied Research in Artificial Intelligence, NRL
- 2011-2014 **Postdoctoral Fellow**, Navy Center for Applied Research in Artificial Intelligence, NRL

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## EDUCATION

- 2011 **PhD in Cognitive Psychology**  
Department of Psychology  
Princeton University, Princeton, NJ
- 2008 **MA in Cognitive Psychology**  
Department of Psychology  
Princeton University, Princeton, NJ
- 2006 **BS in Psychology and Electronic Arts**  
School of Humanities, Arts, and Social Sciences  
Rensselaer Polytechnic Institute, Troy, NY

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## HONORS & AWARDS

- 2015 “IngeniUS” early-career role model, Department of Defense
- 2014 Jerome and Isabella Karle Distinguished Scholar Fellowship, Naval Research Laboratory
- 2013 “Rising Star”, Association for Psychological Science
- 2011 National Research Council Research Fellowship, National Academy of Sciences
- 2007 Graduate Research Fellowship, National Science Foundation
- 2006 Walker McKinney Life Sciences Fellowship, Princeton University

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## FUNDING

- 2023-2025 **Computing static and dynamic spatial relations from video**  
Naval Research Laboratory (Co-PI with A. Lovett)
- 2019-2022 **Automating human meta-epistemic inference**  
Naval Research Laboratory (Principal investigator)
- 2019-2021 **Establishing the critical tests for machine understanding for human-machine teaming**  
Office of the Secretary of Defense (Technical lead; PIs: L. Blaha, J.G. Trafton, R. St. Amant)
- 2016-2018 **Contextual modeling and spatiotemporal reasoning for autonomous systems**  
Office of Naval Research (Technical lead; PIs: D. Aha, J.G. Trafton)
- 2016-2018 **Causal inference in a computational model of human reasoning**  
Naval Research Laboratory (Principal investigator)
- 2013-2015 **Coherent and accurate status updates**  
Office of Naval Research (Technical lead; PI: J.G. Trafton)
- 2011-2014 **Explanatory reasoning in cognitive robotics and human-robot interaction**  
National Research Council (Principal investigator)

- in press Harner, H. & **Khemlani, S.** (in press). The development of desire language: A corpus study of 'want'. Manuscript in press at *Cognitive Development*.
- Johnson-Laird, P.N., Byrne, R.M.J., & **Khemlani, S.** (in press). Models of possibilities instead of logic as the basis of human reasoning. Manuscript in press at *Minds & Machines*.
- 2023 Albertella, L., ... **Khemlani, S.**, ... & Yucel, M. (2023). Building a transdisciplinary expert consensus on the cognitive drivers of performance under pressure: An international multi-panel Delphi study. *Frontiers in Psychology*, 13, e1017675.
- Johnson-Laird, P.N., Byrne, R.M.J., & **Khemlani, S.** (2023). Human verifications: Computable with truth values outside logic. *Proceedings of National Academy of Sciences*, 120, e2310488120.
- Johnson-Laird, P.N. & **Khemlani, S.** (2023). What happened to the “new paradigm”? A commentary on Knauff and Gazzo Castañeda (2023). *Thinking & Reasoning*, 29, 409-415.
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- Kelly, L., & **Khemlani, S.** (2023). Temporal explanations. *Journal of Experimental Psychology: General*, 152, 1639-1646.
- 2022 Blaha, L., ... **Khemlani, S.**, ... & Wong, R. (2022). Understanding is a process. *Frontiers in Systems Neuroscience*, 16, 800280.
- Bucciarelli, M., Mackiewicz, R., **Khemlani, S.**, & Johnson-Laird, P.N. (2022). The causes of difficulty in children's creation of informal programs. *International Journal of Child-Computer Interaction*, 31, 100443.
- Harner, H., & **Khemlani, S.** (2022). Reasoning about *want*. *Cognitive Science*, 46, e13170.
- Johnson-Laird, P.N., Bucciarelli, M., Mackiewicz, R., & **Khemlani, S.** (2022). Recursion in algorithms, thought, and language. *Psychonomic Bulletin & Review*, 29, 430-454.
- Khemlani, S.**, & Johnson-Laird, P.N. (2022). Reasoning about properties: A computational theory. *Psychological Review*, 129, 289-312.
- 2021 Henne, P., O'Neill, K., Bello, P., **Khemlani, S.**, & De Brigard, F. (2021). Norms affect prospective causal judgments. *Cognitive Science*, 45, 2103-2116.
- Khemlani, S.**, Bello, P., Briggs, G., Harner, H., & Wasylyshyn, C. (2021). Much ado about nothing: The mental representation of omissive causation. *Frontiers in Psychology*, 11, 3854.
- Trafton, J.G., Raymond, P., & **Khemlani, S.** (2021). The power of theory. *ACM Transactions on Human-Robot Interaction*, 10, 11.
- 2020 Kelly, L., **Khemlani, S.**, & Johnson-Laird, P.N. (2020). Reasoning about durations. *Journal of Cognitive Neuroscience*, 32, 2103-2116.
- Khemlani, S.** & Johnson-Laird, P.N. (2020). Causal conflicts produce domino effects. *Quarterly Journal of Experimental Psychology*, 73, 2317-2327.
- Korman, J., & **Khemlani, S.** (2020). Explanatory completeness. *Acta Psychologica*, 209, 103139.
- Korman, J., & **Khemlani, S.** (2020). Teleological generics. *Cognition*, 200, 104157.
- 2019 Kelly, L., Prabhakar, J., & **Khemlani, S.** (2019). Updating and reasoning: Different processes, different models, different functions. *Behavioral and Brain Sciences*, 42, e258.
- Khemlani, S.**, & Johnson-Laird, P. N. (2019). Why machines don't (yet) reason like people. *KI – Künstliche Intelligenz*, 33, 219-228.
- 2018 Bucciarelli, M., Mackiewicz, R., **Khemlani, S.**, & Johnson-Laird, P. N. (2018). Simulation in children's conscious recursive reasoning. *Memory & Cognition*, 46, 1302-1314.
- Khemlani, S.**, Byrne, R.M.J., & Johnson-Laird, P.N. (2018). Facts and possibilities: A model-based theory of sentential reasoning. *Cognitive Science*, 42, 1887-1924.
- Khemlani, S.**, Wasylyshyn, C., Briggs, G., & Bello, P. (2018). Mental models and omissive causation. *Memory & Cognition*, 46, 1344-1359.
- 2017 Hiatt, L., Narber, C., Bekele, E., **Khemlani, S.**, & Trafton, J. G. (2017). Human modeling for human-robot collaboration. *International Journal of Robotics Research*, 36, 580-596.
- Khemlani, S.**, & Johnson-Laird, P.N. (2017). Illusions in reasoning. *Minds & Machines*, 27, 11-35.
- 2016 Bucciarelli, M., Mackiewicz, R., **Khemlani, S.**, & Johnson-Laird, P. N. (2016). Children's creation of algorithms: simulations and gestures. *Journal of Cognitive Psychology*, 28, 297-318.
- 2015 Johnson-Laird, P. N., **Khemlani, S.**, & Goodwin, G.P. (2015). Logic, probability, and human reasoning. *Trends in Cognitive Sciences*, 19, 201-214.

- Johnson-Laird, P. N., **Khemlani, S.**, & Goodwin, G.P. (2015). Response to Baratgin et al.: Mental models integrate probability and deduction. *Trends in Cognitive Sciences*, 19, 548-549.
- Khemlani, S.**, Harrison, A. M., & Trafton, J. G. (2015). Episodes, events, and models. *Frontiers in Human Neuroscience*, 9, 590, 1-13.
- Khemlani, S.**, Lotstein, M., & Johnson-Laird, P. N. (2015). Naive probability: Model-based estimates of unique events. *Cognitive Science*, 39, 1216-1258.
- Khemlani, S.**, Lotstein, M., Trafton, J.G., & Johnson-Laird, P. N. (2015). Immediate inferences from quantified assertions. *Quarterly Journal of Experimental Psychology*, 68, 2073-2096.
- 2014 **Khemlani, S.**, Barbey, A., & Johnson-Laird, P. N. (2014). Causal reasoning with mental models. *Frontiers in Human Neuroscience*, 8, 849, 1-15.
- Khemlani, S.**, Orenes, I., & Johnson-Laird, P. N. (2014). The negation of conjunctions, conditionals, and disjunctions. *Acta Psychologica*, 151, 1-7.
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- 2013 **Khemlani, S.**, & Johnson-Laird, P. N. (2013). Cognitive changes from explanations. *Journal of Cognitive Psychology*, 25, 139-146.
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- 2012 Hiatt, L.M., **Khemlani, S.**, & Trafton, J. G. (2012). An explanatory reasoning framework for embodied agents. *Biologically Inspired Cognitive Architectures*, 1, 23-31.
- Khemlani, S.** & Johnson-Laird, P. N. (2012). Hidden conflicts: Explanations make inconsistencies harder to detect. *Acta Psychologica*, 139, 486-491.
- Khemlani, S.**, & Johnson-Laird, P. N. (2012). Theories of the syllogism: A meta-analysis. *Psychological Bulletin*, 138, 427-457.
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- 2011 **Khemlani, S.**, & Johnson-Laird, P. N. (2011). The need to explain. *Quarterly Journal of Experimental Psychology*, 64, 2276-88.
- Khemlani, S.**, & Oppenheimer, D. (2011). When one model casts doubt on another: A levels-of-analysis approach to causal discounting. *Psychological Bulletin*, 137, 195-210.
- Khemlani, S.**, Sussman, A., & Oppenheimer, D. (2011). *Harry Potter* and the sorcerer's scope: Latent scope biases in explanatory reasoning. *Memory & Cognition*, 39, 527-535.
- Leslie, S.-J., **Khemlani, S.**, & Glucksberg, S. (2011). Do all ducks lay eggs? The generic overgeneralization effect. *Journal of Memory and Language*, 65, 15-31.
- 2010 **Khemlani, S.**, & Goodwin, G. (2010). The function and representation of concepts. *Behavioral and Brain Sciences*, 33, 216-217.
- Khemlani, S.**, Lee, N.Y.L., & Bucciarelli, M. (2010). Determinants of cognitive variability. *Behavioral and Brain Sciences*, 33, 37-38.
- 2009 **Khemlani, S.**, & Johnson-Laird, P. N. (2009). Disjunctive illusory inferences and how to eliminate them. *Memory & Cognition*, 37, 615-623.
- 2008 Bucciarelli, M., **Khemlani, S.**, & Johnson-Laird, P. N. (2008). The psychology of moral reasoning. *Judgment and Decision Making*, 3, 121-139.

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- Kon, M., **Khemlani, S.**, & Lovett, A. (2024). Measuring and modeling pursuit detection in dynamic visual scenes. In L. Samuelson, S. Frank, M. Toneva, A. Mackey, and E. Hazeltine (Eds.), *Proceedings of the 46th Annual Conference of the Cognitive Science Society*. Austin, TX: Cognitive Science Society.
- Mackiewicz, R., Bucciarelli, M., **Khemlani, S.**, & Johnson-Laird, P.N. (2024). Eye movements are like gestures in the creation of informal algorithms. In L. Samuelson, S. Frank, M. Toneva, A. Mackey, and E. Hazeltine (Eds.), *Proceedings of the 46th Annual Conference of the Cognitive Science Society*. Austin, TX: Cognitive Science Society.
- 2023 Bio, B., & **Khemlani, S.** (2023). Omniscience errors in mental state reasoning. In M. Goldwater, F. Anggoro, B. Hayes, and D. Ong (Eds.), *Proceedings of the 45th Annual Conference of the Cognitive Science Society*. Austin, TX: Cognitive Science Society.
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- 2022 Harner, H., & **Khemlani, S.** (2022). Frequently produced semantic features reflect principled connections. In J. Culbertson, A. Perfors, H. Rabagliati, and V. Ramenzoni (Eds.), *Proceedings of the 44th Annual Conference of the Cognitive Science Society*. Austin, TX: Cognitive Science Society.
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- Harner, H., & **Khemlani, S.** (2022). How children talk about their desires: A corpus study of ‘want’. In J. Culbertson, A. Perfors, H. Rabagliati, and V. Ramenzoni (Eds.), *Proceedings of the 44th Annual Conference of the Cognitive Science Society*. Austin, TX: Cognitive Science Society.
- 2021 Briggs, G., Harner, H., & **Khemlani, S.** (2021). Preferences in the quantified description of visual groups. In T. Fitch, C. Lamm, H. Leder, and K. Tessmar (Eds.), *Proceedings of the 43rd Annual Conference of the Cognitive Science Society*. Austin, TX: Cognitive Science Society.
- Harner, H., & **Khemlani, S.** (2021). Desires can conflict with intentions; plans cannot. In T. Fitch, C. Lamm, H. Leder, and K. Tessmar (Eds.), *Proceedings of the 43rd Annual Conference of the Cognitive Science Society*. Austin, TX: Cognitive Science Society.
- Kelly, L., & **Khemlani, S.** (2021). Temporal explanations help resolve temporal conflicts. In T. Fitch, C. Lamm, H. Leder, and K. Tessmar (Eds.), *Proceedings of the 43rd Annual Conference of the Cognitive Science Society* (pp. 1292-1298). Austin, TX: Cognitive Science Society.
- Khemlani, S.** (2021). Epistemic verbs produce spatial models. In T. Fitch, C. Lamm, H. Leder, and K. Tessmar (Eds.), *Proceedings of the 43rd Annual Conference of the Cognitive Science Society*. Austin, TX: Cognitive Science Society.
- 2020 Briggs, G., Harner, H., & **Khemlani, S.** (2020). Visual grouping and pragmatic constraints in the generation of quantified descriptions. In B. Armstrong, S. Denison, M. Mack, and Y. Xu (Eds.), *Proceedings of the 42nd Annual Conference of the Cognitive Science Society*. Austin, TX: Cognitive Science Society.
- Harner, H. & **Khemlani, S.** (2020). A theory of bouletic reasoning. In B. Armstrong, S. Denison, M. Mack, and Y. Xu (Eds.), *Proceedings of the 42nd Annual Conference of the Cognitive Science Society*. Austin, TX: Cognitive Science Society.
- Kelly, L. & **Khemlani, S.** (2020). Directional biases in durative inference. In B. Armstrong, S. Denison, M. Mack, and Y. Xu (Eds.), *Proceedings of the 42nd Annual Conference of the Cognitive Science Society*. Austin, TX: Cognitive Science Society.

- 2019 Briggs, G., Harner, H., Wasylyshyn, C., Bello, P., & **Khemlani, S.** (2019). Neither the time nor the place: Omissive causes yield temporal inferences. In A. Lieto (Ed.), *Proceedings of the 7th International Workshop on Artificial Intelligence and Cognition*.
- Briggs, G. & **Khemlani, S.** (2019). A cognitively plausible algorithm for causal inference. In T. Stewart (Ed.), *Proceedings of the 17th International Conference on Cognitive Modeling*.
- Henne, P., Bello, P., **Khemlani, S.**, & De Brigard, F. (2019). Norms and the meaning of omissive enabling conditions. In A. Goel, C. Seifert, & C. Freksa (Eds.), *Proceedings of the 41st Annual Conference of the Cognitive Science Society*. Austin, TX: Cognitive Science Society.
- Kelly, L., & **Khemlani, S.** (2019). The consistency of durative relations. In A. Goel, C. Seifert, & C. Freksa (Eds.), *Proceedings of the 41st Annual Conference of the Cognitive Science Society*. Austin, TX: Cognitive Science Society.
- 2018 Bekele, E., Lawson, W., Horne, Z., & **Khemlani, S.** (2018). Implementing a robust explanatory bias in a person re-identification network. In *IEEE Conference on Computer Vision and Pattern Recognition (CVPR 2018)*. Salt Lake City, UT: IEEE.
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- Korman, J., & **Khemlani, S.** (2018). These boots are made for walking: Teleological generalizations from principled connections. In C. Kalish, M. Rau, T. Rogers, & J. Zhu (Eds.), *Proceedings of the 40th Annual Conference of the Cognitive Science Society*. Austin, TX: Cognitive Science Society.
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- 2017 Bello, P., Wasylyshyn, C., Briggs, G., & **Khemlani, S.** (2017). Contrasts in reasoning about omissions. In G. Gunzelmann, A. Howes, T. Tenbrink, & E. Davelaar (Eds.), *Proceedings of the 39th Annual Conference of the Cognitive Science Society*. Austin, TX: Cognitive Science Society.
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- 2016 **Khemlani, S.** (2016). Automating human inference. In U. Furbach and C. Shon (Eds.), *Proceedings of the 2nd IJCAI Workshop on Bridging the Gap between Human and Automated Reasoning* (pp. 1–4). CEUR Workshop Proceedings.
- Khemlani, S.**, & Johnson-Laird, P. N. (2016). How people differ in syllogistic reasoning. In A. Papafragou, D. Grodner, D. Mirman, and J. Trueswell (Eds.), *Proceedings of the 38th Annual Conference of the Cognitive Science Society*. Austin, TX: Cognitive Science Society.
- 2015 Bello, P., & **Khemlani, S.** (2015). A model-based theory of omissive causation. In R. Dale, C. Jennings, P. Maglio, T. Matlock, D. Noelle, A. Warlaumont, & J. Yoshimi (Eds.), *Proceedings of the 37th Annual Conference of the Cognitive Science Society*. Austin, TX: Cognitive Science Society.
- Khemlani, S.**, Goodwin, G.P., & Johnson-Laird, P.N. (2015). Causal relations from kinematic simulations. In R. Dale, C. Jennings, P. Maglio, T. Matlock, D. Noelle, A. Warlaumont, & J. Yoshimi (Eds.), *Proceedings of the 37th Annual Conference of the Cognitive Science Society*. Austin, TX: Cognitive Science Society.

- Khemlani, S.**, & Johnson-Laird, P.N. (2015). Domino effects in causal contradictions. In R. Dale, C. Jennings, P. Maglio, T. Matlock, D. Noelle, A. Warlaumont, & J. Yoshimi (Eds.), *Proceedings of the 37th Annual Conference of the Cognitive Science Society*. Austin, TX: Cognitive Science Society.
- 2014 **Khemlani, S.**, Lotstein, M., & Johnson-Laird, P. N. (2014). A mental model theory of set membership. In P. Bello, M. Guarini, M. McShane, & B. Scassellati (Eds.), *Proceedings of the 36th Annual Conference of the Cognitive Science Society*. Austin, TX: Cognitive Science Society.
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- 2013 **Khemlani, S.**, Gartenberg, D., Park, K.H., & Trafton, J.G. (2013). Uncertainty can increase explanatory credibility. In M. Knauff, M. Pauen, N. Sebanz, & I. Wachsmuth (Eds.), *Proceedings of the 35th Annual Conference of the Cognitive Science Society*. Austin, TX: Cognitive Science Society.
- Khemlani, S.** & Johnson-Laird, P. N. (2013). Mental simulation and the construction of informal algorithms. In M. Knauff, M. Pauen, N. Sebanz, & I. Wachsmuth (Eds.), *Proceedings of the 35th Annual Conference of the Cognitive Science Society*. Austin, TX: Cognitive Science Society.
- Khemlani, S.**, Trafton, J. G., & Johnson-Laird, P. N. (2013). Deduction as stochastic simulation. In R. West & T. Stewart (Eds.), *Proceedings of the 12th International Conference on Cognitive Modeling*.
- 2012 **Khemlani, S.** & Moore, A. (2012). Evaluative feedback improves deductive reasoning. In N. Miyake, D. Peebles, & R. Cooper (Eds.), *Proceedings of the 34th Annual Conference of the Cognitive Science Society*. Austin, TX: Cognitive Science Society.
- Khemlani, S.**, Orenes, I., & Johnson-Laird, P.N. (2012). Negating compound sentences. In N. Miyake, D. Peebles, & R. Cooper (Eds.), *Proceedings of the 34th Annual Conference of the Cognitive Science Society*. Austin, TX: Cognitive Science Society.
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- 2011 **Khemlani, S.**, Lotstein, M., & Johnson-Laird, P. N. (2011). What makes intensional estimates of probabilities inconsistent? In L. Carlson, C. Hölscher, & T. Shipley (Eds.), *Proceedings of the 33rd Annual Conference of the Cognitive Science Society* (pp. 1906-1911). Austin, TX: Cognitive Science Society.
- 2010 **Khemlani, S.** & Johnson-Laird, P.N. (2010). Explanations make inconsistencies harder to detect. In S. Ohlsson & R. Catrambone (Eds.), *Proceedings of the 32nd Annual Conference of the Cognitive Science Society* (pp. 2900-2905). Austin, TX: Cognitive Science Society.
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- 2009 Arkoudas, K., Bringsjord, S., & **Khemlani, S.** (2009). Qualitative spatial reasoning via 3-valued heterogeneous logic. In J.L.G. Dietz (Ed.), *Proceedings of the International Conference on Knowledge Engineering and Ontology Development 2009* (pp. 80-87). Porto, Portugal: INSTICC Press.
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- 2008 **Khemlani, S.** & Johnson-Laird, P.N. (2008). Illusory inferences with embedded disjunctions. In B. C. Love, K. McRae, & V. M. Sloutsky (Eds.), *Proceedings of the 30th Annual Conference of the Cognitive Science Society* (pp. 2128-2133). Austin, TX: Cognitive Science Society.

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- 2007 **Khemlani, S.**, Leslie, S.-J., Glucksberg, S., & Fernandez, P. R. (2007). Do ducks lay eggs? How people interpret generic assertions. In D. McNamara & J.G. Trafton (Eds.), *Proceedings of the 29th Annual Conference of the Cognitive Science Society* (pp. 395-400). Mahwah, NJ: Erlbaum.
- 2006 Neth, H., **Khemlani, S.**, Oppermann, B., & Gray, W. (2006). Juggling multiple tasks: A rational analysis of multitasking in a synthetic task environment. In *Proceedings of the 50th Annual Meeting of the Human Factors and Ergonomics Society*. Santa Monica, CA: Human Factors and Ergonomics Society.
- 2005 Bringsjord, S., **Khemlani, S.**, Arkoudas, K., McEvoy, C., Destefano, M., & Daigle, M. (2005). Advanced synthetic characters, evil, and E. In A.E.R. Marwan Al-Akaidi (Ed.), *Game-On 2005, 6th International Conference on Intelligent Games and Simulation*. Ghent-Zwijnaarde, Belgium: European Simulation Society.
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BOOK  
CHAPTERS

- 2023 Johnson-Laird, P. N., & **Khemlani, S.** (2023). Mental models and the algorithms of deduction. In R. Sun (Ed.), *Cambridge Handbook on Computational Cognitive Sciences*. Cambridge, UK: Cambridge University Press.
- 2021 **Khemlani, S.** (2021). Psychological theories of syllogistic reasoning. In M. Knauff and W. Spohn (Eds.), *Handbook of Rationality*. Cambridge, MA: MIT Press.
- 2018 **Khemlani, S.** (2018). Reasoning. In S. Thompson-Schill (Ed.), *Stevens' Handbook of Experimental Psychology and Cognitive Neuroscience*. Wiley & Sons.
- 2017 Johnson-Laird, P. N., Goodwin, G.P., & **Khemlani, S.** (2017). Mental models and reasoning. In V. Thompson and L. Ball (Eds.), *International Handbook of Thinking & Reasoning*. Routledge.
- Johnson-Laird, P. N. & **Khemlani, S.** (2017). Mental models and causation. In M. Waldmann (Ed.), *Oxford Handbook of Causal Reasoning*. London, UK: Oxford University Press.
- 2013 Johnson-Laird, P. N., & **Khemlani, S.** (2013). Toward a unified theory of reasoning. In B. Ross (Ed.), *The Psychology of Learning and Motivation* (pp. 1-42). Cambridge, MA: Academic Press.
- 

SOFTWARE

- 2023 **Khemlani, S.** (2023). nodus-ponens: A full-stack framework for running high-level reasoning and cognitive science experiments in Node.js (version 1.3.12). Retrieved from <https://www.npmjs.com/package/nodus-ponens>.
- Khemlani, S.**, & Johnson-Laird, P.N. (2023). mReasoner: A unified computational implementation of mental model theory of thinking and reasoning (version 2.0.9678). Retrieved from <https://github.com/skhemlani/mReasoner>.

## INVITED TALKS

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- 2024 **Princeton University**, *Workshop on Understanding in Natural and Artificial Minds*  
**Universidad Instituto de Empresa**, *NATO SAS-189 Meeting*  
**University of Maryland**, *Cognitive Science Colloquium Series*
- 2022 **University of Granada**, *Centro de Mente, Cerebro y Comportamiento Colloquium*
- 2021 **Claremont Graduate University**, *Applied Cognitive Science Talk Series*
- 2019 **Villanova University**, *Cognitive Science Program Colloquium Series*
- 2018 **Duke University**, *Center for Cognitive Neuroscience*  
**George Mason University**, *Department of Psychology*
- 2017 **Harvard University**, *Department of Psychology*
- 2016 **Duke University**, *Center for Cognitive Neuroscience*  
**New York University**, *NYU ConCats, Department of Psychology*  
**University of Quebec at Montreal**, *Summer School in Cognitive Sciences*
- 2015 **New York University**, *NYU ConCats, Department of Psychology*
- 2014 **University of Edinburgh**, *Department of Psychology*  
**Oxford University**, *St. Catherine's College*  
**Institute for Human and Machine Cognition**, *Ocala Afternoon Lecture Series*
- 2013 **University of Freiburg**, *Center for Cognitive Science*  
**Washington University in St. Louis**, *Philosophy-Neuroscience-Psychology Seminar*
- 2012 **Brown University**, *Department of Cognitive, Linguistic, and Psychological Sciences*
- 2011 **Naval Research Laboratory**, *Navy Center for Applied Research in Artificial Intelligence*
- 2010 **New York University**, *NYU ConCats, Department of Psychology*

## RECENT CONFERENCE TALKS

- 2023 **Khemlani, S.** (2023). Interactive spatial reasoning on a mobile robot. Talk presented at the 14th London Reasoning Workshop.
- 2022 Harner, H., & **Khemlani, S.** (2022). Frequently produced semantic features reflect principled connections. Virtual talk presented at Cognitive Science Society (CogSci 2022).  
Harner, H., & **Khemlani, S.** (2022). How children talk about their desires: A corpus study of *want*. Virtual talk presented at Cognitive Science Society (CogSci 2022).  
**Khemlani, S.** (2022). Tracking spatial relations with mReasoner. Virtual talk presented at London Reasoning Workshop and at Human Behavioral XAI.
- 2021 **Khemlani, S.** (2021). Logic and possibility. Virtual talk presented at Logic Learning Conference 2021.  
Korman, J., & **Khemlani, S.** (2021). What makes an explanation *incomplete*? Virtual talk presented at Cognitive Science Society (CogSci 2021).
- 2020 Briggs, G., Harner, H., & **Khemlani, S.** (2020). Visual grouping and pragmatic constraints in the generation of quantified descriptions. Virtual talk presented (by Briggs and Harner) at Cognitive Science Society (CogSci 2020).  
**Khemlani, S.** (2020). Leveraging conceptual constraints for interactive AI. Virtual talk presented at European Conference on Artificial Intelligence (ECAI 2020) and at Robots: Science and Systems (RSS 2020).
- 2019 Briggs, G., & **Khemlani, S.** (2019). A cognitively plausible algorithm for causal inference. Talk presented (by Briggs) at *International Conference on Cognitive Modeling*, Montreal, Canada.  
Briggs, G., Harner, H., Wasylshyn, C., Bello, P., & **Khemlani, S.** (2019). Neither the time nor the place: Omissive causes yield temporal inferences. Talk presented (by Harner) at *International Workshop on Artificial Intelligence and Cognition*, Manchester, UK.  
Kelly, L., & **Khemlani, S.** (2019). The consistency of durative relations. Talk presented (by Kelly) at *London Reasoning Workshop*, London, UK.  
Bhat, N., & **Khemlani, S.** (2019). The dynamic processing of perceptual models. Talk presented (by Khemlani) at *London Reasoning Workshop*, London, UK.
- 2018 Bekele, E., Lawson, W., Horne, Z., & **Khemlani, S.** (2018). Implementing a robust explanatory bias in a person re-identification network. Talk presented (by Bekele) at *Computer Vision and Pattern Recognition (CVPR 2018)*, Salt Lake City, UT.

RECENT  
CONFERENCE  
TALKS (CONT'D)

- Bekele, E., Lawson, W., Horne, Z., & **Khemlani, S.** (2018). Human-level explanatory biases for person re-identification. Talk presented (by Bekele) at Human-Robotic Interaction (HRI 2018), Chicago, IL.
- Byrne, R., Goodwin, G., Johnson-Laird, P.N., **Khemlani, S.**, Ragni, M., & Quelhas, C. (2018). What conditionals mean. Talk presented (by Johnson-Laird) at London Reasoning Workshop, London, UK.
- Korman, J., & **Khemlani, S.** (2018). These boots are made for walking: Teleological generalizations from principled connections. Talk presented (by Korman) at Cognitive Science Society (CogSci 2018), Madison, WI.
- 2017 Horne, Z., & **Khemlani, S.** (2017). Principled connections underlie the inherence bias in explanatory reasoning. Talk presented (by Horne) at London Reasoning Workshop, London, UK.
- Khemlani, S.**, Hinterecker, T., & Johnson-Laird, P.N. (2017). The provenance of modal inference. Talk presented at Advances in Cognitive Systems (ACS 2017), Troy, NY, and at Cognitive Science Society (CogSci 2017), London, UK.
- Korman, J., & **Khemlani, S.** (2017). How people detect when an explanation is incomplete. Talk presented (by Korman) at London Reasoning Workshop, London, UK.
- 2016 **Khemlani, S.**, Harrison, A., & Trafton, J.G. (2016). An embodied architecture for thinking and reasoning about time. Talk presented at Cognitive Science Society (CogSci 2016), Philadelphia, PA.
- Khemlani, S.**, & Johnson-Laird, P.N. (2016). How people differ in syllogistic reasoning. Talk presented at Cognitive Science Society (CogSci 2016), Philadelphia, PA; and at the Meeting in Memory of Vittorio Girotto, London, UK.
- 2015 **Khemlani, S.**, Goodwin, G., & Johnson-Laird, P.N. (2015). Causal relations form kinematic simulations. Talk presented at London Reasoning Workshop, London, UK and Cognitive Science Society (CogSci 2015), Pasadena, California.
- 2014 **Khemlani, S.**, Lotstein, M., & Johnson-Laird, P.N. (2014). The conditional probabilities of unique events. Talk presented at London Reasoning Workshop, London, UK.
- Khemlani, S.**, & Trafton, J.G. (2014). Percentile analysis for goodness-of-fit comparisons of models to data. Talk presented at Cognitive Science Society (CogSci 2014), Quebec City, Canada.

## MENTORING & ADVISING

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### Postdoctoral researchers

Now at:

2023-present	Maria Kon, NRC Postdoctoral Research Fellow (joint mentorship with A. Lovett)	–
2021-present	Branden Bio, NRC Postdoctoral Research Fellow	–
2018-2021	Laura Kelly, NRC Postdoctoral Research Fellow	–
2019-2021	Hillary Harner, NRC Postdoctoral Research Fellow	Altamira Corporation
2017-2018	Zachary Horne, NRC Postdoctoral Research Fellow	University of Edinburgh
2016-2018	Joanna Korman, NRC Postdoctoral Research Fellow	MITRE Corporation

### High school students

2019	Neha Bhat, Science and Engineering Apprenticeship Program	Virginia Tech
2017, 2018	Nikhil Khosla, Science and Engineering Apprenticeship Program	University of Michigan

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## RECENT PROFESSIONAL ACTIVITIES

2024	Program committee, 45th Annual Conference of the Cognitive Science Society US Representative Member, NATO SAS-189 RTG on Anticipatory Intelligence
2023	Program committee, 44th Annual Conference of the Cognitive Science Society Organizer, Meeting in Honor of Phil Johnson-Laird
2022	Program committee, 44th Annual Conference of the Cognitive Science Society
2021	Organizer, ICT 2021 Symposia on Mental Models in Thinking and Reasoning Consultant, NRC Mentoring Guides for Research Advisers
2020	Panelist, NRC/ASEE Postdoctoral Research Publication Award Directorate Panel Program committee, ECAI-20 Workshop on Computational Argumentation and Cognition
2019	Organizer, IJCAI-19 Workshop on Bridging the Gap between Human and Automated Reasoning Organizer, CogSci 2019 Workshop on Predicting Individual Human Reasoning
2018	Chair, NRC/ASEE Postdoctoral Research Publication Award Directorate Panel Organizer, FAIM Workshop on Bridging the Gap between Human and Automated Reasoning
2016-2018	Organizer, NCARAI Seminar Series
2016	Organizer, Meeting in Honor of Vittorio Girotto Organizer, CogSci 2016 Workshop on Interactive Spatiotemporal Cognition
2015	Organizer, EAPCogSci Symposium on High-Level Inference through Mental Simulation Program committee, 37th Annual Conference of the Cognitive Science Society
2014	Member abstracts co-chair, 36th Annual Conference of the Cognitive Science Society

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## EDITORIAL & REVIEW SERVICES

### Editorial board membership (journals):

*Cognitive Science*  
*Journal of Cognitive Psychology*  
*Thinking & Reasoning*

### Ad-hoc reviewer (conferences):

*Architectures and Mechanisms for Language Processing*  
*Annual Meeting of the Cognitive Science Society (CogSci)*  
*ACM/IEEE International Conference on Human-Robot Interaction*  
*International Joint Conference on Artificial Intelligence*

### Ad-hoc reviewer (grants):

*Defense Advanced Research Projects Agency · National Science Foundation · European Research Council · French National Research Agency · Research Council KU Leuven*

**Ad-hoc reviewer (journals):**

*ACM Transactions on Interactive Intelligent Systems*  
*Acta Psychologica*  
*Advances in Cognitive Psychology*  
*Argument & Computation*  
*Brain & Behavior*  
*Child Development*  
*Cognition*  
*Cognitive Research: Principles and Implications*  
*Cognitive Science*  
*Cognitive Psychology*  
*Computational Brain & Behavior*  
*Experimental Psychology*  
*Frontiers in Human Neuroscience*  
*Japanese Psychological Research*  
*Journal of Cognitive Psychology*  
*Journal of Cognitive Science*  
*Journal of Experimental Psychology: General*  
*Journal of Experimental Psychology: Language, Memory, and Cognition*  
*Journal of Semantics*  
*Journal of Memory & Language*  
*Inquiry*  
*Memory & Cognition*  
*Nature Human Behaviour*  
*Paladyn: Journal of Behavioral Robotics*  
*Philosophical Psychology*  
*PLOS ONE*  
*Proceedings of the National Academy of Sciences*  
*Psychological Bulletin*  
*Psychological Review*  
*Psychonomic Bulletin & Review*  
*Quarterly Journal of Experimental Psychology*  
*Trends in Cognitive Sciences*  
*Thinking & Reasoning*  
*Sage OPEN*  
*Scientific Reports*  
*Synthese*