

Development & Validation of the

EXTRAORDINARY TEAMS

INVENTORY



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ETI Phases of Development Background

The Extraordinary Teams Inventory (ETI) has undergone four phases of development.

- The first phase culminated in 2009, with the publication of *Extraordinary Groups: How Ordinary Teams Achieve Amazing Results* (Wiley) by Geoffrey Bellman and Kathleen Ryan. Based on field study interviews conducted with 60 people who claimed to have had an amazing team experience, their book offers a profile and definition of an extraordinary team, a theoretical model, and action suggestions for increasing the likelihood of becoming extraordinary.
- The second phase concluded in 2014 with the HRDQ publication of the ETI and supplemental materials by Kevin Coray, Ryan, and Bellman. This original version of the instrument was based on survey-based research with 61 groups. To help differentiate between versions of the ETI as it has been developed, the 2014 first edition will be referred to as “ETI 1.0.”
- Once ETI 1.0 was in public use, many teams began to use the instrument. The third phase ended in 2019, when Coray analyzed the data from these teams to cross-validate the structure (establishing high construct validity) and reliability of the original instrument.
- The fourth and most recent phase has resulted in the publication of ETI 2.0 in 2021 by HRDQ. In 2020, the Extraordinary Teams Partnership, consisting of Coray, Ryan, and Bellman and seven other coach/consultants steeped in the Extraordinary Teams model, worked with HRDQ to conduct a pilot test with 42 teams. In all, 325 team members answered 75 test questions, which included those from the first edition of the ETI. The additional 40 questions were suggested by research and practice with teams that had used the ETI. The factor analysis of this data led to the ETI 2.0, a 60-question team assessment tool.

Phase 1: The Bellman and Ryan Field Study

In 2006, Bellman and Ryan began their collaboration with one question: what makes some teams exceptional when most are not? To figure this out, they began a two-year field study involving in-depth interviews with 60 people who declared they had been part of an amazing group—at work or play, at home or in the community. As Bellman’s and Ryan’s ideas developed, they shared them in conferences and workshops. The perspectives of over 500 executives, managers, and consultants helped to shape and refine the core content of their book, *Extraordinary Groups: How Ordinary Teams Achieve Amazing Results* (Wiley, 2009).

Structured Interviews. From the beginning of their field study, Bellman and Ryan used five rounds of structured interviews, asking consistent questions in a consistent way to find out about people’s amazing team experiences. Throughout, they utilized an appreciative inquiry (AI) approach to discover the foundational elements of exceptional teams. AI is a strengths-based, positive approach to leadership development and organizational change. Their interviews opened with, “Tell me about your great group experience,” followed by “What were the factors that enabled it to be so powerfully positive?”

Eventually the components of their theory, the Group Needs model, emerged, along with a list of eight indicators of an extraordinary team. These behavioral indicators of exceptional teaming later became the catalyst for the development of the ETI.

Interviewees were found by networking online. The selected stories all centered on experiences in which a group of 2–20 people came together for a stated purpose and the following elements were present:

- The results achieved *and* the experience itself surpassed expectations.
- Those involved described what happened with words such as *wow, a big win, huge, surprising, meaningful, or amazing*.
- The setting was in a workplace, volunteer organization, family, or spiritual or personal growth community.
- The group met face to face or virtually.

No time limits were imposed on when the story took place as long as it met the criteria listed above and interviewees recalled the details of what happened.

The Range of Experiences. People aged 17–70 responded to the request for an interview; they each had a vivid and positively powerful group experience to share. Their stories fell into three different settings: paid work, community volunteering, or personal life. Examples follow here.

- *The world of paid work.* A successful campaign to save 200 lives in a hospital, the development of a software security system, and a youth pastor taking a group of junior high students to Mexico for a week.
- *Community volunteering.* Building job interviewing skills in a public high school, a grassroots effort to screen school board candidates, and organizing a one-day conference for 600 people whose work was reported to the Dalai Lama.
- *Experiences from personal life.* The recommitment of a long-married couple, a group of family and friends supporting a dying woman and her children, and ten college friends and their children taking a 17-day raft trip in a remote part of Alaska.

Data Analysis. Once the stories were categorized by setting, counting and clustering began. What did people say? How many people said the same thing? What patterns emerged among the clusters?

Only items that appeared in more than half the experiences were examined as base components of the profile for an extraordinary group. The eight characteristics are Compelling Purpose, Shared Leadership, Just Enough Structure, Full Engagement, Embracing Differences, Unexpected Learning, Strengthened Relationships, and Great Results.

Just prior to publication of their book, Coray, an industrial psychologist and team effectiveness researcher, joined Ryan and Bellman in thinking about how these eight characteristics could be measured in a publicly available instrument—what eventually became the ETI (2014, HRDQ).

On the following pages is a description of each of the three phases detailing how the development of the three versions of the ETI (1.0, 1.5, and 2.0) has shifted our thinking about extraordinary teams and some of the distinctions you will find between the content of the ETI 2.0 materials and that of the book, *Extraordinary Groups*.

Phase 2: Development of ETI 1.0 & Description of the Norm Group & Emergence of the Extraordinary Teams Partnership

Maintaining an AI basis, The ETI 1.0 evolved by Coray and Ryan developing behaviorally-observable, positively-focused questions about the eight Indicators of Extraordinary Teams described in *Extraordinary Groups*:

- Compelling Purpose
- Shared Leadership
- Just Enough Structure
- Full Engagement
- Embracing Differences
- Unexpected Learning
- Strengthened Relationships
- Great Results—both tangible and intangible

They randomized these questions and administered a draft inventory to teams in three rounds of testing. Each round offered a new draft with successively improved questions, scoring, and psychometric aspects. To establish construct validity, Coray conducted item (question) and factor analyses to refine the scores and the questions.

The final sample included 484 participants in 61 groups, each with 3–19 members. The average group size was eight members. The full testing phase of the ETI 1.0 development involved a total of 128 different groups that included close to 800 team members.

The teams that participated in the three rounds of testing can be characterized as follows:

- Fifty-three were task teams. Most were paid teams, but four came from community volunteer groups, and another four were focused on personal life.
- Groups ranged from self-study to community pro bono consulting. They came from boards, small businesses, secondary and higher education institutions, and very large businesses in sectors such as health, consumer products, and consulting. They included multinational corporations and municipal and federal government agencies.
- In 42 of the teams, members worked together mostly face to face—meaning that they spent less than 25% of their time using technology to communicate. It is important to remember that in 2010–12, working virtually was somewhat of a new phenomenon; these teams were tracked because the authors wondered if this circumstance might make a difference in how the teams scored. In the remaining groups, virtual communication (phone, email, or teleconferencing) was used as follows:
 - Twelve teams worked 26–75% virtually, and two worked virtually more than 75% of the time.
 - Forty-five teams had a designated leader; 15 were self-organizing and did not have a designated leader.
 - Thirty-five teams were in the public or not for profit sector; 21 were in the private sector, and five were self-study groups.
 - Fifty-five were intact teams; four were not, meaning they did not work together to produce a common team-based result (e.g., a group of regional managers who were affiliated but did not work together normally).

After all the data were analyzed, this phase produced valid and reliable scores for five of the eight indicators of an extraordinary team. The ETI 1.0 went forward with these five:

- Compelling Purpose
- Full Engagement
- Embracing Differences
- Strengthened Relationships
- Profound Learning (formerly Unexpected Learning)

The Emergence of the Extraordinary Teams Partnership. Soon after the publication of the ETI 1.0, two consultants and coaches to organizations and teams, Sally Starbuck Stamp and Jeff Thoren, joined Bellman, Ryan, and Coray in a group all using the Extraordinary Teams concepts and the ETI in their client practices. Over time, this group has expanded to include the ETI authors and other master consultants and coaches who have used the ETI 1.0 with over 100 teams. To date, Debbie Ward, Brad Britton, Travis Green, Todd Weinstein, and Dara Ayres have joined the group. The group has come to be known as the “Extraordinary Teams Partnership” (ETP). For more information on ETP, please visit www.extraordinaryteams.us.

Phase 3: Development: ETI 1.0 Cross-Validation

By the end of 2017, 69 additional teams ($n = 771$ team members) had completed the ETI 1.0. At that time, Coray ran a factor analysis on this new data to see if the factor structure from the initial norm base could be replicated. The factor structure was very similar, thereby cross-validating the five-factor ETI 1.0 indicator solution developed in the initial pilot test, demonstrating that the ETI 1.0 indicators are very stable and solid. This level of psychometric sophistication meets a high bar for a survey instrument.

The ETI 1.0 included a few extra research questions, aimed at the further developing three of the original concepts:

- Full Engagement
- Shared Leadership
- Just Enough Structure

The research questions were included to try to boost the reliability of and provide the psychometric quality for Full Engagement, Just Enough Structure, and Shared Leadership.

Phase 4: Pilot Test (ETI 1.5) & Validation of ETI 2.0

With the full onset of COVID-19 in 2019, team use of the ETI in face-to-face settings slowed. The authors decided that this might be an opportune time to run a pilot test to make a major revision to the ETI 1.0. They were curious about the following:

- Could Full Engagement be more refined?
- Could Shared Leadership and Just Enough Structure develop into full-fledged scores?
- Were there other aspects of team dynamics embedded within Embracing Differences?
- Could the two elements of the definition of an Extraordinary Team—Outstanding Results and Personal Transformation—be measured?
- What would enable the survey, support materials, and process to be delivered online, virtually, and as a team coaching tool rather than a workshop?

The ETI 1.0 authors, Coray and Ryan, along with Sally Stamp and Travis Green, formed a subgroup of the ETP to pursue these questions. Based on their consulting and coaching experience with client teams, the book, and learnings from ETI 1.0, the four spent three months developing the new a priori questions. They added 46 new research questions to the ETI 1.0 to produce a 75-question pilot test version (ETI 1.5).

In the fall of 2019, ETP members and HRDQ made a free offer to teams to take the ETI 1.5. By the beginning of 2021, 42 teams, including a total of 325 team members, had participated in this pilot study. Of note, since the ETI 1.5 pilot test took place during 2020 and early 2021, 41 of the 42 teams were working virtually. The participating teams were offered a free virtual debriefing of their results on the original ETI 1.0 team report. These team debriefs gave an opportunity to preview the proposed new scores, language, and facilitative questions to see how they were received by the test teams.

ETI 2.0—Score Descriptions and Psychometrics

Once the pilot sample was available, Coray completed item and factor analyses. Some questions were eliminated because they fell into unique rather than common factors. Through a series of factor analyses and iterative elimination of questions that had factor loadings below .40, the threshold for inclusion in a factor, a final ten-factor solution was generated. These ten factors formed the basis for reliability analyses and correlational analyses to generate ten valid and reliable scores. Each score contains multiple questions that measure a particular extraordinary team behavior that could be arrayed on a continuum from Ordinary to Solid to Extraordinary teaming, as with the ETI 1.0.

This new, reduced set of 60 questions and two demographic questions define the ETI 2.0.

The Evolution of the Ten Practices of Extraordinary Teams. Table 1 on page 8 shows the evolution of the scores from ETI 1.0 to ETI 2.0. As noted above, the ETI 1.5 pilot test was designed to determine if they could better measure the four indicators observed in the original field study not included in the ETI 1.0: Shared Leadership, Just Enough Structure, and Great Results, both tangible (Outstanding Results) and intangible (Personal Transformation). There was also a desire to refine aspects of the existing ETI 1.0 scores based on the Phase 3 cross-validation results and the collective experience of ETP consultants as they used the ETI 1.0.

Details of this evolution of key concepts include the following:

- As to Full Engagement, the factor analytic results suggested two scores rather than one. These two factors were distinct in seeing “engagement in meetings” as separate from “engagement outside of meetings” when team members interacted. The factor analytic results in Phase 4, which included additional engagement questions, showed that the authors had effectively measured these two aspects, which they labeled as “Full Engagement” and “Great Meetings.”
- The Phase 3 cross-validation suggested that more robust scores for Shared Leadership and Just Enough Structure could be developed. Accordingly, additional research questions about these constructs could be added to ETI 1.5. In Phase 4, the factor analytic results and reliability analyses showed that the authors had adequately measured these constructs, which they named “Shared Leadership” and “Adaptive Structure.”
- An additional question that had a U-shaped set of alternatives was added to assess whether team members thought there was too much, too little, or just the right amount of structure for the team to operate effectively. This question was not included in the Adaptive Structure standard error score and is presented separately in the ETI Team Report.
- The Phase 4 factor analytic results also showed that the questions about Great Results: Intangible and Profound Learning were represented by a single factor. This result confirmed the ETP consultants’ experience in practice with these concepts (that they were not distinctly different). As such, the authors dropped Profound Learning and included the best questions from Profound Learning and Great Results: Intangible into a single practice score named “Personal Transformation.”
- Research questions related to Great Results: Tangible were included in ETI 1.5. Once this practice was carefully defined based on the psychometrics, it was titled “Outstanding Results.”
- The authors were very aware of the importance of psychological safety in the organization literature (Edmonson 1999) as well as a large study by Google of its workforce (Project Aristotle 2012) about what made teams more effective. Research questions about psychological safety were added to ETI 1.5. Further, from their own client experiences, they believed that there was more to Embracing Difference that was important to study. Inspired by the work of the Conscious Leadership Group and the Strozzi Institute on the somatic aspects of teaming, several research questions related to these disciplines were added. The Phase 4 factor analytic results showed that these research questions fell into two factors. A key psychological safety question augmented the existing Embracing Difference practice score, and the other questions formed a factor that was titled “Genuine Curiosity.”

Table 1. Evolution of the ETI

Initial ETI 1.0 [30 questions]	Pilot Test ETI 1.5* [75 questions]	Final Ten Practices ETI 2.0 [60 questions]
Compelling Purpose	Compelling Purpose	Compelling Purpose
Embracing Difference	Embracing Difference (expanded with a psychological safety question)	Embracing Difference
Strengthened Relationships	Strengthened Relationships	Strong Relationships
Full Engagement	Full Engagement (refocused on engagement outside of meetings)	Full Engagement
Profound Learning	Profound Learning	<i>Deleted. Several questions included in Personal Transformation.</i>
	Shared Leadership	Shared Leadership
	Great Meetings	Great Meetings
	Just Enough Structure	Adaptive Structure (includes an unscored three-point question to rate if there is too much, just right, or not enough structure)
		Genuine Curiosity (includes some of the a priori psychological safety and Embracing Differences questions)
	Great Results: Intangible	Personal Transformation (combination of Great Results: Intangible a priori questions and Profound Learning questions)
	Great Results: Tangible	Outstanding Results

*ETI 1.0 scores retained & new a priori scores developed to attempt to measure four additional practices described in the field study but not included in ETI 1.0.

Description of the Norm Group

The pilot questions in the ETI 1.5 were completed by 325 people in 42 teams. Those team members also completed the existing questions from the ETI 1.0. As such, the total sample for the ETI 2.0 includes 1,247 team members who completed the ETI 1.0 and its research questions and the 325 people and 42 teams who completed the ETI 1.5, which included both the ETI 1.0 questions and the ETI 1.5 pilot test questions. At the completion of this phase, over 270 teams and 1,572 team members had completed either the ETI 1.0 or the ETI 1.5.

The 42 teams that completed the ETI 1.5 had an average size of eight team members; 18 teams were not for profit, eight were government teams, 15 were for profit, and one team was a long-standing unincorporated professional learning group. Of these teams, 79% contained Black, Indigenous or People of Color (BIPOC) and/or LGBT+ membership. Categorizing all teams who have completed the ETI 1.0 or 1.5 shows that about

- 39% are private sector (ranging in size from small start-ups to large multinationals),
- 25% are not for profit,
- 21% are college or university (most of which are from state universities),
- 11% are public sector (federal, state and local), and
- 4% are other or unknown types of teams or groups.

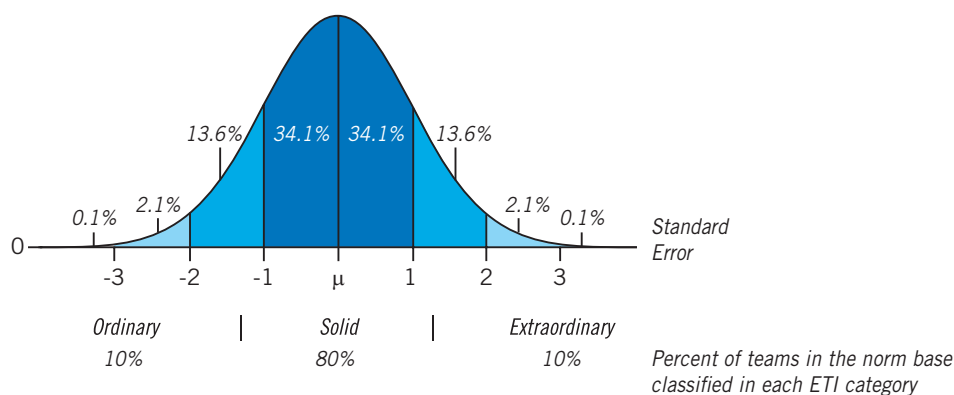
Most teams are from the U.S. or Canada, with a limited number from Australia or Asia.

Distribution of Team Standard Error Scores in the Norm Base

The final set of responses to the questions was recoded to have more nearly normal frequency distributions. Further, the scores for each practice are based on standardized means. Technically, each practice score is a standard error score translated into a T-score.

These means are normally distributed such that the general curve of the team results for the norm base is as shown below in Figure 1: Distribution of ETI 1.0 Scores in the norm base. Since this is a sampling distribution of group means, the standard deviation units are known as “standard error units.” Since standard error units are very sensitive and are affected by group size, the authors conservatively defined teams that scored outside the Solid range (i.e., those that scored at the tails of the distribution) as either Ordinary or Extraordinary.

Figure 1: Distribution of ETI 1.0 Scores in the norm base.



The dark blue area is less than one standard error unit from the mean (μ). For the normal distribution, this accounts for about 68% of the norm base, while two standard error units from the mean (the medium and dark blue areas) account for about 95%, and three standard error units (light, medium, and dark blue) account for about 99.7%.

Based on our consulting and coaching experience with teams, we agreed that most teams were Solid, rather than Extraordinary or Ordinary, and we wanted to be more conservative about identifying teams as either Ordinary or Extraordinary, being certain that extraordinary teams were very different from Solid ones.

As such, by our definition, teams that score in the Ordinary range are more than 1.28 standard error units below the mean and so have results similar to those of teams in the bottom 10% of the norm base. The Solid range contains the 80% of teams that score within plus or minus 1.28 standard error units from the mean, and the 10% of teams that score in the Extraordinary range have results that are greater than 1.28 standard error units above the mean.

Percentile Ranks

Also presented in the ETI 2.0 are percentile ranks for each of the ten practice scores. These percentile ranks are a transformation of the standard error scores provided to help teams interpret their scores in a more commonly understood manner.

Psychometric Characteristics of the Scores

Table 2 below shows the extent to which the ten practice scores are related. These intercorrelations run from .49 to .70. As such, no more than 24%–49% of any ETI 2.0 practice score is redundant with another ETI 2.0 practice score. This suggests that all the scores are in the same general domain of team-related behavior but that they are relatively independent and do in fact measure unique aspects of extraordinary team concepts. Throughout the rest of this section, we refer to these concepts as the ten “Practices of Extraordinary Teams.” From a psychometric perspective, we measure these practices with questions and compute a team score for each practice.

Table 2. ETI 2.0 Practices Correlation Matrix

	AS	SL	SR	GM	ED	CP	GC	FE	PT
(AS) Adaptive Structure	1								
(SL) Shared Leadership	.627	1							
(SR) Strong Relationships	.490	.512	1						
(GM) Great Meetings	.626	.647	.515	1					
(ED) Embracing Difference	.624	.611	.518	.655	1				
(CP) Compelling Purpose	.567	.612	.610	.638	.600	1			
(GC) Genuine Curiosity	.682	.651	.574	.700	.686	.655	1		
(FE) Full Engagement	.623	.616	.499	.669	.676	.646	.679	1	
(PT) Personal Transformation	.580	.580	.661	.548	.594	.635	.603	.515	1
(OT) Outstanding Results	.591	.489	.439	.583	.603	.646	.578	.670	.544

Note: All correlations are significant at the $p < 0.001$ level (two-tailed); $n = 325$. Based on recoded five-point scales.

ETI 2.0 Practice Scores Statistically Distinguish Among Teams

Another way to determine if the ETI 2.0 practice scores significantly distinguish among teams is to run analysis of variance tests between teams. These results show that the ETI 2.0 scores do in fact statistically differ among teams, since the between groups F-tests are all statistically significant ($p < .001$). As such, it is safe to conclude that teams with significantly different scores are in fact meaningfully different and would demonstrate very different behaviors in the practices measured by the ETI 2.0.

Statistical Reliability

The table 3 below shows the reliability of the ETI 2.0 scores. Reliability demonstrates the extent to which a team's scores are likely to remain the same over time if no purposeful intervention is made to change a score and if team membership remains the same. An example of such intervention might be to initiate a discussion about what members find compelling about the team's purpose. In other words, reliability indicates the stability of the scores. The ETI reliability coefficients run from .77 (psychometrically acceptable) to .86–.92 (excellent).

Table 3. Number of Questions and Reliability Coefficients for ETI 2.0 Scores

No.	Score Name	Number of Questions	Reliability (α coeff.)
1	Outstanding Results (OR)	7	.891
2	Personal Transformation (PT)	7	.919
3	Compelling Purpose (CP)	6	.913
4	Genuine Curiosity (GC)	7	.897
5	Embracing Difference (ED)	6	.857
6	Great Meetings (GM)	5	.886
7	Full Engagement (FE)	7	.899
8	Strong Relationships (SR)	7	.899
9	Shared Leadership (SL)	3	.856
10	Adaptive Structure (AS)	3	.771

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